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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,264

03/23/2006

Uri Peled

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109 7590 05/29/2008

The Dow Chemical Company
Intellectual Property Section
P.O. Box 1967
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EXAMINER

NGUYEN, SON T

ART UNIT

PAPER NUMBER

3643

MAIL DATE

DELIVERY MODE

05/29/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/573,264	PELED ET AL.	
	Examiner	Art Unit	
	Son T. Nguyen	3643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/22/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1,2,5,8-10** are rejected under 35 U.S.C. 102(b) as being anticipated by Yamana et al. (EP1331247A1 on form PTO-1449).

For claim 1, Yamana et al. teach an improved agricultural soil heating process (for agriculture film, page 9, [0081]) using a plastic film characterized in that the plastic film consists essentially of an aromatic thermoplastic polyurethane (the ingredients in making the polyurethane are aromatic diisocyanates or dicarboxylic acid which makes the polyurethane aromatic, page 5, [0031], page 7, [0049]). Note that the transitional phrase “consists essentially of” is taken to be equivalent to that of the transitional phrase “comprising” (see comments below in Response to Argument” and MPEP 2111.03).

For claim 2, Yamana et al. teach where the thickness of the aromatic thermoplastic polyurethane film is from about 20 to about 150 microns (page 9, [0078]).

For claim 5, Yamana et al. teach where the agricultural soil heating process is solar soil sterilization because it is used for agricultural film for plant or ground cover.

For claim 8, Yamana et al. teach where the aromatic thermoplastic polyurethane used to prepare the film has a Shore A hardness of at least 80 (page 3, [0016]).

For claim 9, Yamana et al. teach where the aromatic thermoplastic polyurethane used to prepare the film has a Shore A hardness of at least 85 (page 3, [0016]).

For claim 10, Yamana et al. teach where the aromatic thermoplastic polyurethane used to prepare the film has a Shore A hardness of at least 90 (page 3, [0016]).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 3,4,6,7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamana et al. as applied to claim 1 above, and further in view of Ward et al. (5428123).

For claims 3 & 4, Yamana et al. teach polyether (page 3, [0021], page 5, [0028]) but not a polyether type of soft segment.

Ward et al. teach known polyether and polyester polyurethanes type of soft segment (col. 2, lines 9-15, col. 7, lines 1-8,48-65, col. 8, lines 1-15) for used in a variety of applications such as films and membranes (col. 1, line 17). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ polyether and polyester polyurethanes type of soft segment as taught by Ward et al. as the preferred polyether and polyester polyurethanes of Yamana et al. in order to provide a flexible, yet strong, film.

For claims 6 & 7, Yamana et al. teach polyurethane but not one with a hard segment content of at least 30 percent by weight or at least 40 percent by weight.

In addition to the above, Ward et al. also teach hard segment polyurethane of at least 30 percent by weight or at least 40 percent by weight (col. 2, lines 9-15, col. 6, lines 8-10, col. 7, lines 1-8, 48-65, col. 8, lines 1-15) for used in a variety of applications such as films and membranes (col. 1, line 17). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ polyurethane of hard segment of at least 30 percent by weight or at least 40 percent by weight as taught by Ward et al. as the preferred polyurethane of Yamana et al. in order to provide a flexible, yet strong, film.

5. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamana et al. (as above).

Yamana et al. are silent about where the aromatic thermoplastic polyurethane used to prepare the film has a Shore D hardness of not more than 75. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the aromatic thermoplastic polyurethane of Yamana et al. with a Shore D hardness of not more than 75, since it has been held that where routine testing and general experimental conditions are present, discovering the optimum or workable ranges until the desired effect is achieved involves only routine skill in the art. In re Aller, 105 USPQ 233.

6. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamana et al. as applied to claim 1 above, and further in view of Hoenig et al. (6156842).

Yamana et al. are silent about where the aromatic thermoplastic polyurethane used to prepare the film has a glass transition temperature (T_g) of less than 25°C.

Hoenig et al. teach aromatic polyurethane used in a variety of applications, wherein the polyurethane is preferably having a T_g of less than 25°C (col. 10, lines 11-28). It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ aromatic polyurethane with a T_g of less than 25°C as taught by Hoenig et al. as the preferred aromatic polyurethane in the process of Yamana et al. in order to create a flexible, yet strong, film or sheet.

Response to Arguments

7. Applicant's arguments filed 1/17/08 have been fully considered but they are not persuasive.

Applicant argued that Yamana's invention use of a gas barrier film in an agricultural application provides no teaching nor suggestion of the Applicants' claimed process for solar soil heating using film made from the specified film resin consisting essentially of aromatic thermoplastic polyurethane.

It is noted that Applicant amended the claim language to include the transitional phrase "consists essentially of". According to MPEP section 2111.03: The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel

characteristics actually are, “consisting essentially of” will be construed as equivalent to “comprising.” See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355 (“PPG could have defined the scope of the phrase consisting essentially of for purposes of its patent by making clear in its specification what it regarded as constituting a material change in the basic and novel characteristics of the invention.”). See also *AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1240-41, 68 USPQ2d 1280, 1283-84 (Fed. Cir. 2003). If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of “consisting essentially of,” applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant’s invention. *In re De Lajarte*, 337 F.2d 870, 143 USPQ 56 (CCPA 1964). See also *Ex parte Hoffman*, 12 USPQ2d 1061, 1063-64 (Bd. Pat. App. & Inter. 1989).

In reviewing Applicant’s specification to give patentable weight to the term “consists essentially of”, the Examiner did not find that the scope of the phrase consisting essentially of for purposes of its patent by making clear in its specification what it regarded as constituting a material change in the basic and novel characteristics of the invention. The process as claimed includes additional steps or components that would materially change the characteristics of Applicant’s invention. For example, paragraphs [0021],[0022] teach other additives that are added to the aromatic thermoplastic polyurethane. These additives do influence soil heating because the anti-fog additives prevent sunlight from being scatter or reflected and the UV stabilization additives protect the film and crop from damage of UV radiation, thus, enhance soil heating. Nothing in Applicant’s specification really suggest the invention is implemented

with only aromatic thermoplastic polyurethane to improve soil heating process; thus, it is concluded that the added transitional phrase of “consists essentially of” merely means the same as “comprising”.

Yamana does teach the film being use as a gas barrier film; however, this is one function/property of the film but not the only one. As stated in paragraphs [0002],[0016],[0081],[0083]. In addition, Yamana's film contains the same ingredients as that of Applicant and the film of Yamana is used for agricultural film, thus, although not stated specifically, Yamana's agricultural film does improve soil heating because it contains the same ingredients as that of Applicant's film. Furthermore, from [0046], it appears that Yamana is concern with some sort of heat-related improvement because he wishes to employ the polyurethane together with ethylene-vinyl alcohol copolymer and additives such as heat stabilizer, UV absorbents, and weather resistance, all of which are also employed by Applicant's invention.

Applicant argued that the blend TPUs of Yamana contain gas barrier improving resin components of EVOH or polyamide polymers which, if still processable into films, would detract from the light transmission properties of the aromatic TPUs and are not guaranteed to provide the same IR radiation blocking properties of aromatic TPUs.

Applicant's remark against Yamana's teaching is without merit because there is no evidence provided by Applicant to prove that by having resin components of EVOH or polyamide polymers would detract the film from light transmission properties of aromatic TPUs. In addition, making a comment such as “not guaranteed” seems

ambiguous because there is no proof and it appears that Applicant is uncertain himself if indeed, resin components as taught in Yamana does not provide the same IR radiation blocking properties. Furthermore, these resin components do not have to be used in the film because Yamana teaches many other components that can be employed and not just resin components of EVOH or polyamide polymers. As mentioned above, Yamana does have some concern with soil heating as stated in [0046]. Thus, it is unlikely that Yamana's components would detract from light transmission and IR radiation blocking as alleged by Applicant.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son T. Nguyen whose telephone number is 571-272-6889. The examiner can normally be reached on Mon-Thu from 10:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter M. Poon can be reached on 571-272-6891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Son T. Nguyen/
Primary Examiner, Art Unit 3643